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Janet Campbell, Editor

GENERAL NEWS

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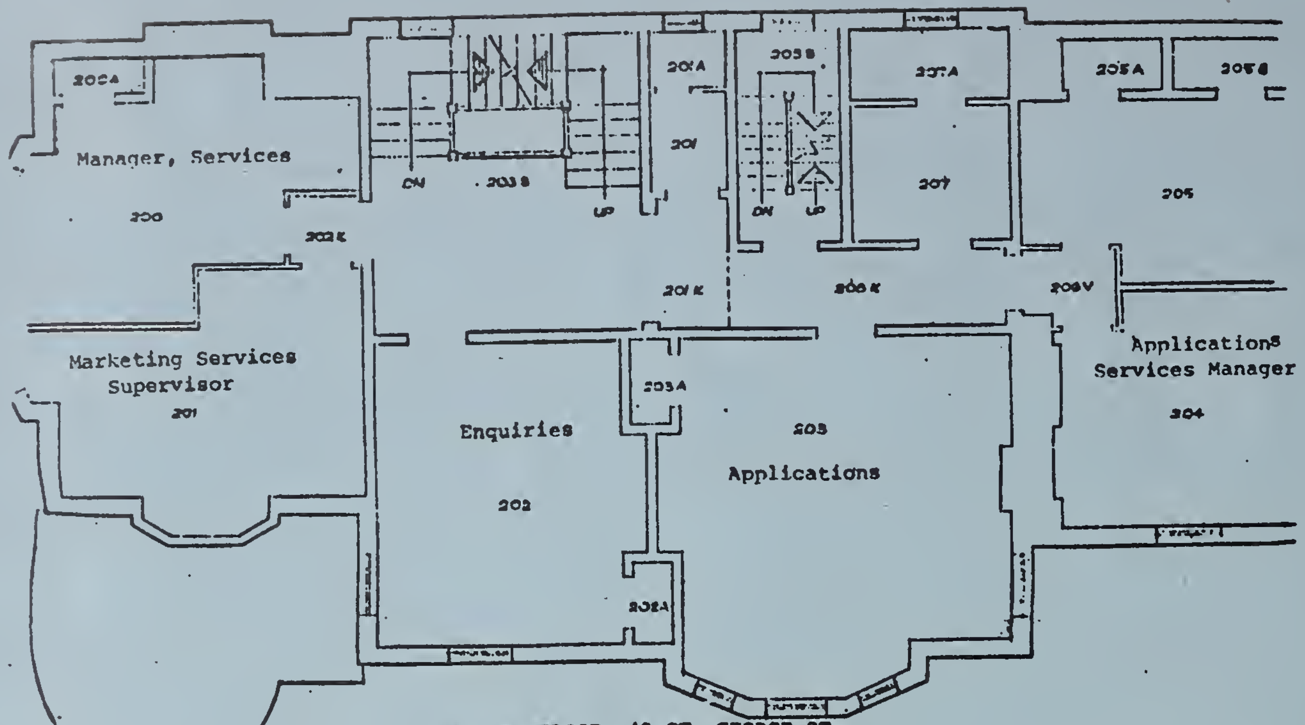
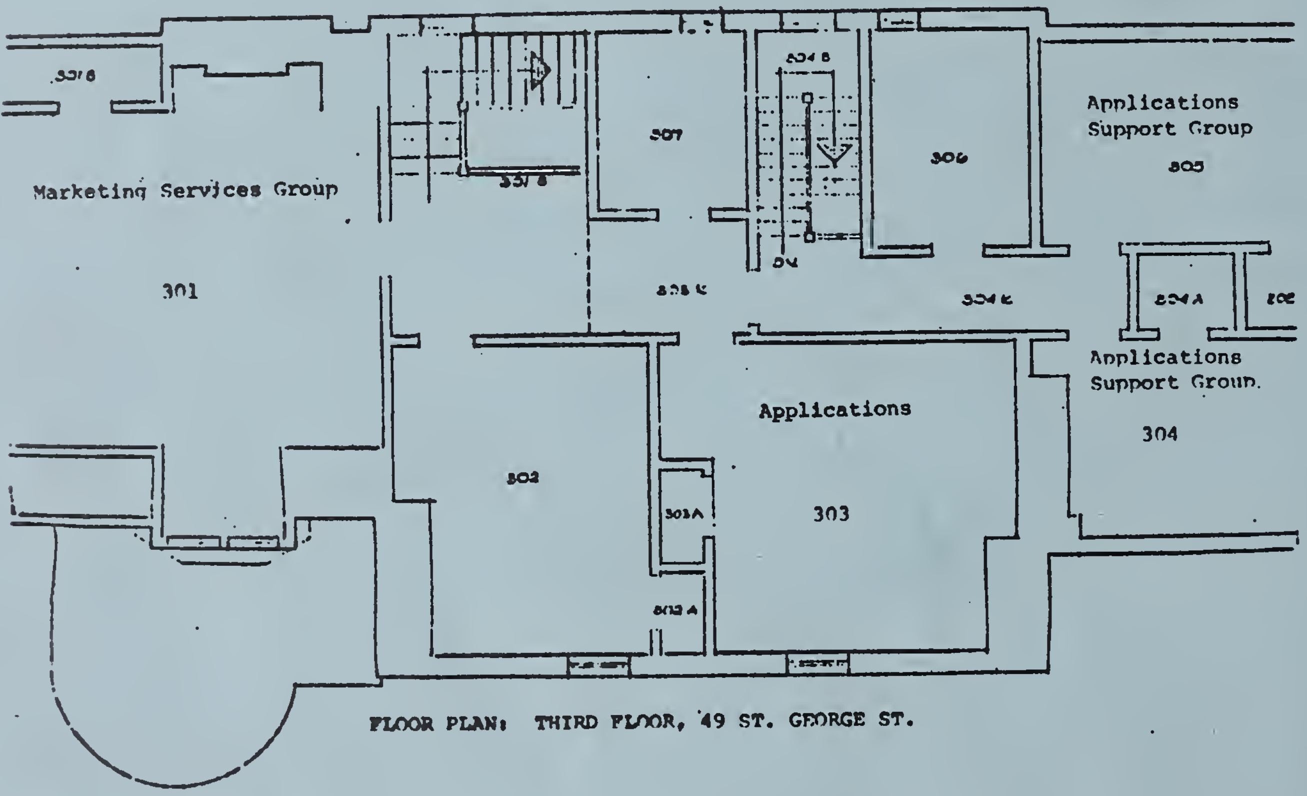


FLOOR PLAN: SECOND FLOOR, 49 ST. GEORGE ST.



FLOOR PLAN: THIRD FLOOR, 49 ST. GEORGE ST.

COMPUTERNEWS is a monthly publication produced by the University of Toronto Computer Centre. Enquiries or contributions should be directed to the Editor, Janet Campbell or the Assistant Editors, Margo Harvie and Ruth Borenstein in the Sandford Fleming Building room SF125 or (416)-928-2066. Layout and ATS typing are provided by Lynne Jenkins. Subscription changes should be directed to the Information Office, Sandford Fleming Building room SF128 or (416)-928-4990.

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ERINDALE SUMMER SERVICES

Erindale Computer Services is removing seven of the ten 2741 terminals in Room 2045 for the summer months. The three remaining machines are available only during regular summer hours (Monday to Friday, 9AM - 5PM) unless other arrangements are made with Computer Services personnel.

The mailbag service between St. George campus and Erindale remains the same for the summer even though a reduced bus schedule is now in effect. The bag leaves Erindale for St. George at 9:10 and 14:10, and St. George for Erindale at 10:15 and 15:15, Monday through Friday.

Vaughan Lawrason

SPECIAL FORM USERS

Due to changes in demand and numbering conventions over the past few years at UTCC, special forms allotment has become a nightmare! In order to get rid of ambiguities and incorrect assignments it will be necessary to reassign most special form numbers. This will take place in August. Users presently holding personal or departmental form numbers are asked to contact Adam Love at 928-7373 before August 1st. UTCC supplied forms numbers will also change at this time and will be documented in USERBOOK. Handouts explaining new numbers will be available at the Information Office and from the Terminal Co-ordinators.

Adam Love

CENSUS TAPES

Lately there has been an increasing amount of interest shown in the Long Form Census Tapes for the 1970-71 census. Anyone interested in these tapes is invited to attend a meeting on Thursday, June 19, at 2.00 p.m. in the Galbraith Building, Room 248.

Don Gibson

MORE INTERACTIVE TERMINAL DEMONSTRATIONS

UTCC is hosting a series of interactive terminal demonstrations in order to acquaint the user community with the various makes and models of interactive terminals available on the market.

The demonstrations are held on an 'open house' basis and users may arrive at any time during the presentation.

DATAMEX Ltd. will be demonstrating the following terminals on Wednesday, June 18 from 1 p.m. to 4 p.m. in room 302, 49 St. George St.

CDI 1030/1132

These are portable, thermal terminals which support APL/ASCII (upper and lower case) character sets. Other features include a transmission rate of 30CPS and a built-in modem.

cont'd...

DEMONSTRATIONS Cont'd

ELITE 2500

This is CRT with an upper and lower case APL/ASCII character set. Screen capacity is 24 lines. Both protected and blink mode are available.

The following terminals have already been demonstrated. Users wishing further information on any of these machines or who have suggestions for future demonstrations should contact Ian Darwin at 928-7318.

- Digital Equipment VT50
- Ahearn and Soper ASL/I
- Volker-Craig
- Hewlett-Packard 2640-A
- Ontel A4000
- Hazeltine (various models)
- Votrax (Voice response unit only)
- IBM 3767

Ian Darwin

NON-CREDIT COURSES AND SEMINARS

The summer schedule of courses and seminars will begin in June and continue through July.

Beginning with this set of courses, UTCC will be instituting a new policy on some courses that require the use of the General Purpose Job Stream or APL. For these courses, users will now be required to provide their Customer Account Number (CAN) on the registration form along with the CAN holder's name. Note that the courses are still free, but there will be no class codes given out on which to run jobs.

This step has become necessary due to the abuse of free accounts. Users will have to use their own codes for these courses - the assignments given out are not expensive. The codes that assignments are run under should be registered for online storage through Sylvia May (SF103).

Room numbers for courses will be sent to registrants along with confirmation of enrollment.

If you wish to take any of the following courses please complete the Registration Form which appears as a supplement to this Newsletter.

THESE COURSES DO NOT REQUIRE CUSTOMER ACCOUNT NUMBERS

INTRODUCTION

Prerequisite:	None
Dates:	June 23, 25, 26
Time:	3-5 p.m.
Maximum # of Registrants:	30
Instructor:	A. Love

This course is for people who have had little, if any, contact with computer programming. It is recommended as a prerequisite for any non-programmer intending to take an introductory course in any language during this schedule or at a later date. The course will cover the basis of inputting and outputting information to and from the computer as well as how information is stored and processed.

cont'd...

COURSES Contd.

WHO ME -- COMPUTE?

Prerequisite: Faculty, Staff, or Graduate Student
Date: June 24
Time: 3-5 p.m.
Maximum # of Registrants: Open
Speakers: Stan Yagi/Dave Scobie

This seminar is intended for those people who think that they may have an application to run on a computer but aren't quite certain how to go about planning or financing it. Also, people who are simply curious about computing and computer applications may wish to attend. The course is tentatively scheduled for one, two hour session, but other session(s) will be scheduled if desired by those attending.

SURVEY OF MATHEMATICAL PACKAGES

Prerequisite: None
Date: July 8
Time: 3-4 p.m.
Maximum # of Registrants: Open
Speaker: J. Roth

This seminar is designed to familiarize the user with the various mathematical packages available at UTCC and to briefly describe each package. If the user becomes interested in any of the packages and wishes further information, he will have the opportunity to meet with the instructor.

INTRODUCTION TO WATFIV

Prerequisite: Introduction to computing or experience in another programming language.
Dates: July 14, 16, 18
Time: 3-5 p.m.
Maximum # of Registrants: 30
Instructor: A. Love

WATFIV is a subset of the FORTRAN language. FORTRAN is a language oriented towards efficient number processing or "scientific" computing.

ADMINISTRATIVE TERMINAL SYSTEM (ATS)

Prerequisite: None
Dates: July 21,23,25,29, 31
Time: 3-4 p.m.
Maximum # of Registrants: 15
Instructors: L. Jenkins/R. Borenstein

ATS is an easy to use text editing system. Yes, it is easy to use. It is a valuable tool for secretaries or anyone preparing documents subject to change. Revisions may be made at anytime without retyping entire sections of the document. Error free and up-to-date documents may therefore be easily and quickly produced.

The course will consist of one session in which the features of ATS will be discussed. The following sessions will be for tutorial aid in carrying out ATS practice sessions. Access to ATS will be provided for the duration of the course.

cont'd...

COURSES Contd.

THE FOLLOWING COURSES REQUIRE THAT THE USER HAVE A CUSTOMER ACCOUNT NUMBER

INTRODUCTION TO PLOTTING

Prerequisite: Must hold a CAN. It is advantageous to know a computing language.
Dates: July 7,9,11,15,17
Time: 3-4 p.m.
Maximum # of Registrants: 30
Instructor: M. Guerin

The course will cover the basics of plotting on the Gould/Calcomp plotters. By completion of the course the student should be able to produce simple plots and graphs on the Gould plotter.

INTRODUCTION TO JOB CONTROL LANGUAGE (JCL)

Prerequisite: Must hold a CAN; knowledge of and experience in using a programming language.
Dates: July 14,16,18,22,24
Time: 4-5 p.m.
Maximum # of Registrants: 30
Instructor: B. Gillart

Job Control Language is the programmer's means of giving instructions and information to the Operating System. Through JCL, requests are made (e.g. memory allocation), information is given to the system (e.g. accounting and class information) and datasets are manipulated. This course is intended to present the basic statements of JCL and explain their uses. The student will be expected to test his knowledge by using JCL to access and manipulate datasets placed on the system by the instructor.

COMPREHENDING IBM MANUALS

Prerequisite: Must hold a CAN. It would be a benefit to have been running jobs on the General Purpose Job Stream.
Dates: July 15,17,22,24
Time: 2-3 p.m.
Maximum # of Registrants: 30
Instructor: M. Wagner

An attempt to explain the fine art of wading through an IBM manual. Discussion will be centred around message manuals, language reference manuals, and programmers' guides, although some time will be spent on other reference manuals and when to refer to them. Exercises in using manuals will be given out - examples taken from actual problems that have crossed the advisor's desk.

Don Gibson

The following is an excerpt from an article written by Jim Dodd which appeared in the University of Waterloo Computer Centre April Newsletter, Issue 1975-3.

MISUSE OF COMPUTER RESOURCES

Recently, two persons were discovered misusing computer resources. One was using a computer account number which he was not authorized to use. The other, in addition to using an unauthorized account number, was maliciously destroying datasets which belonged to the Data Processing Department. Both individuals were apprehended and charged under the Criminal Code of Canada.

cont'd...

MISUSE Cont'd...

The Security Department, with the help of the Computing Centre, prepared the cases for court presentation and then it was in the hands of the Crown Attorney's office. In each case, a guilty plea was entered and sentences of eighteen months conditional discharge were handed down by the courts. Both convictions set precedents in Canadian law.

The following article is reprinted from the University of Toronto Bulletin, May 16, 1975, No.33.

CHANGES IN FUNDING FOR COMPUTER SERVICES

As a result of recommendations of the Budget Committee, the Advisory Committee on Computer Policy and Planning and the Research Board, the method of funding the provision of computer services for research has changed markedly, as of May 1.

The following is a brief summary of the features of the new procedure:

Changes

i. There will be no subsidy of individual MRC, NRC or Canada Council grantees.

ii. The departments will be allocated research computer funds with the advice that they should disburse the funds to grantees along the lines of previous computer use patterns. This fund should be available to all grantees. The value of the fund made available will equal the computer subsidy made to grantees within that department over the last year plus an allowance for the increase of the cost of computer services. As a rule of thumb for departments, the department's contribution towards the overall computing costs of a project should be approximately three times the grantee's contribution.

Implementation

Researchers may now apply to their departmental chairmen for research computing assistance.

i. To ensure uninterrupted computing services, it is suggested that a letter of authorization for an allocation of departmental research computer funds be presented to the UTCC administration office at the same time as an account based directly on the research grant is opened.

ii. The present procedure for opening such a UTCC research computing account will be unchanged.

iii Charging to the grant and departmental accounts will be sequential with individual research grants charged first.

cont'd...

CHANGES IN FUNDING Cont'd

iv. UTCC recommends that departmental computing funds be encumbered in a single blanket purchase order thereby reducing the amount of paper work and inconvenience for the individual researcher and departments. A simple letter of authorization to spend a portion of the departmental research funds should be given to a grantholder.

For 1975-76, 90 per cent of the departmental research computing budget must be spent at the UTCC.

As proposed by the Advisory Committee and agreed to by the Research Board, a special "large user" category will be established to reduce the impact of the policy change on those grantees making large scale use of computing and their departments. "Large users" (individuals who have used in excess of $10,000 in 1974-75 or have encumbered at least $10,000 of grant and other funds to purchase computing services) will be eligible for specific aid from a central fund administered by a Research Board Committee. Letter applications should provide:

a. Total amount of computing support being sought.

b. List of NRC, MRC or Canada Council grant applications seeking this support.

c. Copy of purchase orders encumbering funds for at least $10,000.

Researchers are reminded that all research grant applications should contain requests for their total computing needs. The granting councils, Canada Council, Medical Research Council, National Research Council, were formally advised of the proposed scheme in the autumn before these councils began reviewing grant applications for awards to begin April 1, 1975. There was general acceptance of the proposed procedure by the councils. The effects on Medical Research Council and Canada Council grantholders are expected to be minimal since both these agencies aim to give a grantee enough funds to carry out research at a level deemed appropriate by the peer reviewers recommending the awards.

USER SERVICES INTEREST GROUP MEETING - TEXT PROCESSORS

The Council of Ontario Universities' User Services Interest Group recently called a meeting of member universities to discuss the topic of Text Processing. Ian Darwin and Stan Yagi represented UTCC at the meeting which took place on April 14, 1975.

Some of the universities represented had several online text processors (University of Toronto and University of Waterloo both have more than one text processor available online) while one university had almost no experience with online text processing. The major concerns of those installations who were considering putting up new systems were resource requirements, system loading and, most important, ease of use by non-programmers.

cont'd...

GROUP MEETING Cont'd

The most widely-used processors were ATS and NSCRIPT, both of which are in use at UTCC and the University of Waterloo. Waterloo has heavily modified NSCRIPT and made almost no modifications to ATS while UTCC has made only a few modifications to NSCRIPT and has extensively modified ATS. These two systems are similar in that they both use a workspace editor, have format commands imbedded in the text, and have online and offline modes. Due to the clumsiness of the standard TSO EDIT command, ATS is in some ways easier to use but has considerably fewer features for formatting than NSCRIPT. If a better text editor for TSO becomes available, NSCRIPT usage might increase.

Several other text processors were discussed as was batch text processing, both card-based systems and post processing of the output from ATS or NSCRIPT. (The final copy of UTCC's USERBOOK is produced by the latter method).

The User Services Interest Group Meeting on text processors enabled the participating installations to share experiences and thereby reduce the risk of duplication of already written programs. As such, the meeting was of interest and value to all installations who attended.

Ian Darwin

CONFERENCE ON COMPUTER PERSONNEL RESEARCH

The Thirteenth Annual Conference on Computer Personnel Research sponsored by the Special Interest Group on Computer Personnel Research of the Association for Computing Machinery will be held in Toronto at the Regency Hyatt House on June 19-20, 1975.

The purpose of this two day conference is to identify and discuss the common problems and needs of those individuals concerned with the selection, training, evaluation and other aspects of the management of computer personnel. Research and problems reported will be of interest to personnel managers, managers of computer installations and researchers in the area of personnel administration of computer centres.

Anyone interested in attending the conference can pick up a program and registration form in the Information Office, SF128.

Ian Darwin

PERSONNEL CHANGES

Farewell this month to Nick Trufyn, Linda Currie and Ashmeed Esack. Good luck and best wishes in your future endeavours.

Welcome to AnneMarie Hutchison and Walter Berndl. AnneMarie is a programmer in the Marketing area and Walter is a programmer in the Systems area. I hope you both enjoy working with us.

Trudy Holland

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

Computers in Europe, 4th edition.
Llandudno, Wales, Richard
Williams and Partners, 1975.

Health Computer Information Bureau.
Health Computer Applications in
Canada: Catalogue and Descriptions.
Ottawa, Dec. 1974.

Henrici, Peter.
Applied and Computational
Complex Analysis, Volume 1:
Power Series-Integration-
Conformal Mapping-Location of
Zeros.
New York, Wiley, 1974.

Patrick, R.L.
AFIPS System Review Manual on
Security.
Montvale, N.J., AFIPS, 1974.

Price, Wilson T.
Elements of FORTRAN IV
Programming, 2nd edition.
San Francisco, Rinehart Press, 1975.

HOURS OF SERVICE - DOMINION DAY

The following hours of service will be in effect during the Dominion Day weekend for:

S/370-165-II Users

	June 27 (FRIDAY)	June 28 (SATURDAY)	June 29 (SUNDAY)	June 30 (MONDAY)	July 31 (TUESDAY)
SF112	regular hrs	10am-6pm	10am-6pm	closed	closed
EUT	regular hrs	10am-6pm	10am-6pm	closed	closed
ASUT	regular hrs	10am-6pm	10am-6pm	closed	closed
AST	regular hrs	10am-6pm	10am-6pm	closed	closed

S/360-65 Users

regular hrs	9am-5pm	9am-5pm	unattended	unattended

CRF Users

regular hrs	closed	closed	closed	closed

Regular hours of service for all systems will resume Wednesday, July 2, 1975.

Janet Campbell

PL/I-F MOVING

PL/I F compiler will be moved from SYS1.LINKLIB to SYS1.PLILINK on July 7, 1975. UTCC and IBM catalogued procedures for PL/I will also be updated accordingly. These changes will help in improving access efficiency for PL/I and other system libraries.

Users who have their own JCL's or procedures for PL/I F are advised that they will henceforth require some form of the STEPLIB card such as:

```
//STEPLIB DD DSN=SYS1.PLILINK,DISP=SHR
```

Kin Fong

NEW TAPE DRIVES

At the beginning of May, UTCC replaced the IBM 3420 tape drive systems on the S/370-165-II and the S/370-155 with tape drives manufactured by Storage Technology Corporation. The new tape drives are plug-compatible with the IBM system previously in use.

Both installations went smoothly with no major problems encountered either at installation time or since production service began using the STC drives. The new drives offer some technological enhancements which should contribute to a lower permanent read/write error rate on tapes. For further information, contact Derry Cox at 928-7092.

Derry Cox

CALCULATION OF SORT/MERGE WORK SPACE

UTCC currently uses the IBM SORT/MERGE program product for all sorting done at the Centre.

The calculation of intermediate work space for the package is often a problem in that the SORT/MERGE program requires contigious space for the work areas. If the space is not contigious, it 'throws away' data to be sorted without any warning messages.

UTCC has several catalogued procedures to assist the SORT user, but the user should be aware of some of the SORT program operating rules in order to prevent errors that may not be obvious.

The UTCC SORT procedures use the so-called balanced technique. This technique requires from three to six SORT work areas. There are alternate techniques available, but the balanced method appears to be optimum for our environment according to various studies performed by the Centre.

Normally, all SORT work areas are assigned to the 3330 scratch volume which contains 19 tracks per cylinder. Very large SORT operations which require more space than is available on the IBM 3330 drive, can be run so that either one or two 2314 disk packs can be used for intermediate storage. A 2314 drive contains 20 tracks per cylinder. These figures will be used below.

The formula for determining the approximate number of tracks needed for work storage is:

cont'd...

CALCULATION Cont'd

$$\text{tracks} = \frac{S*N}{k(n-1)} + 2N$$

where n is the number of intermediate storage areas $3 \leq n \leq 6$, S is the number of records in the data set and k=b/l where b=7,000 for a 2314 or 13,000 for a 3330 drive and l is the length in bytes of the logical record. Only the integer portion of k is used in the calculation. Here, also, the logical record should not be confused with the blocksize.

The standard UTCC SORT procedure SORTER defaults to six 3330 work areas of 2 cylinders each, allowing the sorting of roughly 26,000 card image records. If this is raised to 3 cylinder work areas, roughly 40,000 card image records can be sorted.

Often very large sorts require much more work space than is available on the online scratch volume. The UTCC SORTMNT1 procedure allows for 3 work areas of 1,320 2314 tracks each and for the sorting of approximately 237,000 card image records. If this is not enough space, the SORTMNT2 procedure allocates 7,700 2314 tracks and allows the sorting of approximately 341,000 card image records. In essence, SORTMNT1 dedicates a complete 2314 to scratch space. SORTMNT2 dedicates two 2314 disk drives to scratch space. The SORTMNT2 procedure allocates 2 work areas of 1,900 tracks each and one work area of 3,900 tracks, the optimum SORT work space capacity at UTCC.

By keeping the above information in mind, the user can determine the maximum storage space required for his particlar case.

All questions regarding this article should be directed to Herb Kugel at 928-7286.

Herb Kugel

RPG BUG

UTCC has noticed some increase in the usage of the Report Program Generator (RPG). Although this programming language is very specialized, it does lend itself easily to certain narrow applications and should not be overlooked as a programming language to solve a specific problem.

RPG does, however, have one bug which UTCC is currently investigating. If a DD statement is missing, the program generated by the RPG processor may go into a loop. RPG users are advised to use constraint in their time and lines estimate while debugging their programs. One user specified 15,000 lines and 5 minutes on his JOB statement and made an error with the DD statement DD name. 15,000 lines of useless output were generated - a great waste of both computer resources and paper.

When debugging RPG programs, or any program for that matter, the user should set time and line limits low on the JOB statement to prevent this sort of thing from happening. Remember that these values can be used for the user's own protection as well as for job scheduling.

Any questions concerning the above should be directed to Herb Kugel at 928-7286.

Herb Kugel

PL/I AND GOULD/CALCOMP PLOTTERS

An interface has been set up to allow easy use of PL/I with the Gould or Calcomp software. The method used makes the differences between PL/I and the FORTRAN oriented plotting software transparent.

This software is now available for user testing and comments. However, no credit requests will be given until the full documentation is in USERBOOK. Comments on the software should be directed to your local Terminal Co-ordinator or Advisor. To use the software:

```
// EXEC  PLIGPLOT,LEVEL=CHECK
             C            OPT
```

Choose G or C for Gould or Calcomp, and CHECK or OPT for the appropriate compiler. In addition, include the statement:

```
%INCLUDE  PLOTTER;
```

in your program. The only restrictions are that only those subroutines described in 3.8PLOTBASIC are supported and arguments that are changed by plotting routines (such as the array passed to SCALE) must be declared to be compatible with FORTRAN (e.g. BIN FLOAT(21)).

Bob Radcliffe

ATTENTION MPSX USERS

Release 1 Modification Level 5 of IBM's linear programming package, MPSX, with Mixed Integer Programming (MIP) feature is now the production version at UTCC. MPSX users not using the MIP feature can use the procedure MPSX as before. Users who wish to make use of the MIP feature however, must now use the procedure MPSXMIP.

Users who have problems with this package should contact John Roth at 928-8701.

John Roth

INFORMATION AVAILABLE IN THE ADVISORS' OFFICE

Many users are unaware that the Advising Office in SF117, contains a large amount of information on the S/370-165. The following is a list of the major types of documentation available:

In the racks:

- Programmer's reference manuals for all system compilers, utilities, linkage editor and loader supported by UTCC S/370.
- Language reference manuals for all major languages.
- A complete set of messages and codes issued by OS MVT (a backup set of VS2 manuals will be installed when needed).

cont'd...

INFORMATION Cont'd

- A complete copy of USERBOOK.
- The available documentation for most of the non-IBM packages supported by UTCC.

The above documentation is duplicated in the filing cabinets behind the advisor for the advisor's use.

In addition, reasonably up-to-date listings arranged by jobname can be found on a table by the door. These listings, of possible interest to users, are described below.

JOBNAME	FREQUENCY	CONTENTS
SYS2PROC	(Weekly)	A listing of all catalogued procedures supported by UTCC.
SYS3PROC	(Weekly)	A listing of all user-supplied catalogued procedures.
CATALOGS	(Weekly)	A listing of the system, USER and TSO catalogues.
USER2314	(Weekly)	This listing contains, for each on-line 2314 (TICxxx) volume, an alphabetic list of datasets and relevant information such as space occupied and used, as well as a mapping of the track by track utilization of the volume.
USER3330	(Weekly)	Same as USER2314, except for each on-line 3330 (USERxx) volume.
LIBRARYS	(Weekly)	A listing of the members of heavily used libraries such as MATHLIB, STATLIB, SSPFLIB, etc.
HELPFILE	(Monthly)	A listing of the text for the TSO HELP command.

UTCC will have similar listings of the HELP text for SPEAKEASY and NSCRIPT in the near future.

Michael Wagner

HSJS STATISTICS - ACADEMIC YEAR 1974-75

The chart below compares the number of jobs processed during May 1974-April 1975 with the same period of the previous year. During this past year, the number of jobs increased by 9.7% from 1,457,135 to 1,598,375. This is lower than the growth rate for the previous year which was 28.7%.

Cont'd...

HSJS STATISTICS Cont'd

JOBS

	74-75	73-74	Change %
May	92,069	84,105	+ 9.5
June	80,756	41,298	+95.0
July	63,889	56,201	+13.7
Aug	32,125	50,040	-35.8
Sept	98,095	92,522	+ 6.0
Oct	233,072	205,914	+13.2
Nov	232,380	221,457	+ 4.9
Dec	117,857	109,128	+ 8.0
Jan	87,843	129,336	-32.0
Feb	192,556	156,159	+23.3
March	229,678	189,767	+21.0
April	138,055	121,208	+13.9

Mark Tapia

HSJS MONTHLY STATISTICS

During the month of April, 1975, 138,055 jobs were processed compared with 121,196 jobs for the previous year, an increase of 13.9%.

The following charts summarize the HSJS activity for the month of April. The graph represents the average number of jobs processed during each half hour period of the day.

Mark Tapia

```
ALL TERMINALS                                      JOB VOLUME FOR 01/04/75 - 30/04/75
CLASS . W                                              (AVERAGE OVER 30 DAYS)

                                                # JOBS WHICH BEGAN EXECUTION AT INDICATED TIME
                                       25   50   75  100  125  150  175  200  225  250  275  300  325  350  375  400  425  450  475  500
                        |#JOBS| TOD|----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
                        |   47|    |666666666
PROCESSOR  #USES   %    |   43|    |66666666
WATFIV     69057 (50)   |   41|   1|66666666
PL/C       30898 (22)   |   37|    |6666666
OTHER*     12637 ( 9)   |   41|   2|66666666
ASMG        6007 ( 4)   |   30|    |666666
ALGOLW      5862 ( 4)   |   23|   3|6666
UTILITY     5164 ( 3)   |   15|    |666
SPITBOL     3052 ( 2)   |   15|   4|666
WATBOL      2619 ( 1)   |   22|    |6666
SIMON       1890 ( 1)   |   13|   5|66
PLUTO        476 ( 0)   |   13|    |66
LISP         322 ( 0)   |    3|   6|
                        |    1|    |
                        |    0|   7|
                        |    2|    |
                        |   33|   8|666666
                        |   56|    |66666666666
                        |   69|   9|6666666666666
                        |  101|    |66666666666666666666
                        |  115|  10|66666666666666666666666
                        |  146|    |66666666666666666666666666666
                        |  158|  11|6666666666666666666666666666666
                        |  169|    |666666666666666666666666666666666
                        |  159|  12|6666666666666666666666666666666
                        |  166|    |666666666666666666666666666666666
                        |  179|  13|66666666666666666666666666666666666
                        |  186|    |6666666666666666666666666666666666666
                        |  196|  14|666666666666666666666666666666666666666
                        |  206|    |66666666666666666666666666666666666666666
                        |  210|  15|666666666666666666666666666666666666666666
                        |  230|    |6666666666666666666666666666666666666666666666
                        |  221|  16|66666666666666666666666666666666666666666666
                        |  224|    |66666666666666666666666666666666666666666666
                        |  204|  17|6666666666666666666666666666666666666666
                        |  189|    |6666666666666666666666666666666666666
                        |  135|  18|666666666666666666666666666
                        |  128|    |6666666666666666666666666
                        |  109|  19|666666666666666666666
                        |  122|    |666666666666666666666666
                        |  128|  20|6666666666666666666666666
                        |  129|    |6666666666666666666666666
                        |  128|  21|6666666666666666666666666
                        |  124|    |666666666666666666666666
SHIFT    #JOBS          |    2|  22|
0 - 8    10708          |    0|    |
8 - 4    71712          |    0|  23|
4 - 12   55635          |    2|    |
                         4601|    | 8-SERVICE FACTOR(2.0) || 6-SERVICE FACTOR(1.0) || 4-SERVICE FACTOR(.75)

TOTAL JOBS AT SF .75 (UNAVERAGED)      0     *SP/K, SPSSQ and SNAP
TOTAL JOBS AT SF 1.0 (UNAVERAGED)138055
TOTAL JOBS AT SF 2.0 (UNAVERAGED)      0
TOTAL JOBS AT ALL SF (UNAVERAGED)138055
```

```
RESOURCE USAGE BY PROCESSOR

                           ||          TOTAL PER PROCESSOR           ||      AVERAGE PER USE       |
                           ||   CPU    |   #CARDS  |    #LINES     ||  CPU   |#CARDS  |  #LINES   |
PROCESSOR  | #USES %TOTAL  ||  (MIN)   |    READ   |    PRINTED    || (MIN)  | READ   |  PRINTED  |
----------------------------------------------------------------------------------------------------
WATFIV     | 69057   (50)  ||  742.44  |  9118426  |  10693078     || 0.008  |  132   |    152    |
PL/C       | 30898   (22)  ||  583.41  |  5544295  |   9153424     || 0.016  |  176   |    296    |
OTHER*     | 12637   ( 9)  ||  153.74  |   735572  |   1466701     || 0.012  |   56   |    116    |
ASMG       |  6007   ( 4)  ||  116.36  |  1047542  |   2282554     || 0.016  |  172   |    376    |
ALGOLW     |  5862   ( 4)  ||   77.66  |  1536117  |   1992203     || 0.012  |  260   |    336    |
UTILITY    |  5164   ( 4)  ||   16.93  |   766381  |   1000164     || 0.000  |  148   |    192    |
SPITBOL    |  3052   ( 2)  ||   45.59  |   462819  |    599548     || 0.012  |  148   |    196    |
WATBOL     |  2619   ( 2)  ||   47.06  |   709644  |    797855     || 0.016  |  268   |    304    |
SIMON      |  1890   ( 1)  ||    7.69  |   156766  |    187471     || 0.004  |   80   |     96    |
PLUTO      |   476   ( 0)  ||    4.70  |    35724  |     66514     || 0.008  |   72   |    136    |
LISP       |   322   ( 0)  ||    4.44  |    46238  |     35124     || 0.012  |  140   |    108    |
ASSIST     |    71   ( 0)  ||    0.70  |    24499  |     32577     || 0.008  |  344   |    456    |
----------------------------------------------------------------------------------------------------
TOTAL        138055        || 1800.70  | 20184023  |  28307213     || 0.013  |  146   |    205    |

*SP/K, SPSSO and SNAP
```

S/370-165-II RELIABILITY

The reliability statistics for April indicate an uptime percentage of 98.6 while the average number of IPL's per day reached 0.70. The number of scheduled hours of production for April totalled 479.

MONTHLY COMPARATIVE FIGURES

MONTH	% UPTIME	UNSCHED. IPLs/DAY
Jan/74	97.0	1.37
Feb/74	98.3	1.25
Mar/74	98.7	1.06
Apr/74	99.3	0.52
May/74	99.2	0.87
Jun/74	96.1	0.75
Jul/74	91.7	1.66
Aug/74	98.3	0.86
Sep/74	94.5	1.83
Oct/74	98.6	1.07
Nov/74	98.9	0.93
Dec/74	97.1	1.21
Jan/75	95.7	2.77
Feb/75	96.0	1.14
Mar/75	96.7	1.10
Apr/75	98.6	0.70

The percentage breakdown of total system downtime for April was:

Hardware: 202 minutes (51.0%)
Software: 74 minutes (18.7%)
Other : 120 minutes (30.3%)

The major events contributing to these downtime totals were as follows:

April 3 - 55 minutes down - 1 IPL

a. 15 minutes were attributed to a system loop on the 3704 during the initial IPL. It was subsequently re-loaded successfully.

b. 40 minutes were charged to a POWER SURGE which tripped a circuit breaker in the MOTOR GENERATOR. The operator switched to the backup generator without problems.

April 8 - 53 minutes down - 2 IPLs

a. All time and IPLs due to permanent access errors on the 7330 SCRATCH volume. It was necessary to format the JOB 0 and initialize a NEW scratch to rectify the problem.

April 10 - 30 minutes down - 1 IPL

a. 20 minutes were lost when the system went into a loop on the 2880 BLOCK MULTIPLEXOR. IBM reset the channel.

b. 10 minutes were attributed to a TSO loop in protect key 0. It was restarted successfully.

April 16 - 124 minutes down - 0 IPL

a. All time and IPLs charged to STORAGE control unit checks in the ITEL memory. A number of bad cards were replaced in the second MEGABYTE.

April 24 - 34 minutes down - 5 IPLs

a. 14 minutes were due to DOUBLE BIT error in the ITEL memory. A bad card was replaced.

b. 12 minutes attributed to a system loop on the 3704.

c. 8 minutes charged to a 100% supervisor loop in O.S.

Paul Scarborough

```
                         DOWNTIME_REPORT_ON___S/370__FOR_APR_75

---------------------------------------------------------------------------------------------------------------------------
|                                                        REIPLS(FREQ) // DOWNTIME (MN)
| DAY  REIPL   DNTIME     0    5    10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95   100|
==========================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+|
| T  1      1        7    |□******
| W  2      1        6    |□*****
| T  3      1       55    |□******************************************************
| F  4      1        6    |□*****
| S  5      0        0    |
| S  6      0        0    |
| M  7      1       10    |□*********
| T  8      2       53    |□□***************************************************
| W  9      0        0    |
| T 10      1       30    |□*****************************
| F 11      0        0    |
| S 12      0        0    |
| S 13      0        0    |
| M 14      1        5    |□****
| T 15      0        0    |
| W 16      0      124    |**************************************************************************************************** 124
| T 17      0        0    |
| F 18      1        7    |□******
| S 19      2       10    |□□********
| S 20      0       15    |***************
| M 21      0        0    |
| T 22      0        0    |
| W 23      0        0    |
| T 24      5       34    |□□□□□*****************************
| F 25      0        0    |
| S 26      0        1    |*
| S 27      0        0    |
| M 28      0        0    |
| T 29      2       19    |□□*****************
| W 30      2       14    |□□************
---------------------------------------------------------------------------------------------------------------------------


LEGEND       : ONE □  =ONE REIPL
               ONE *  =ONE MINUTE OF DOWNTIME
```

```
                         _S/370__DOWNTIMES_DURING_APR_75

----------------------------------------------------------------------------------------------------------------------
|                                                      TIME OF DAY (HOURS)
| DAY   RELOADS DNTIME    0   1   2   3   4   5   6   7   8   9   10  11  12  13  14  15  16  17  18  19  20  21  22  23  24|
==========================+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+|
| T  1      1        7    |                                              S
| W  2      1        6    |                                             S
| T  3      1       55    |                                I                               000
| F  4      1        6    |                                                              S
| S  5      0        0    |
| S  6      0        0    |
| M  7      1       10    |                                                                                 S
| T  8      2       53    |                                                           000               O
| W  9      0        0    |
| T 10      1       30    |                                HI          S
| F 11      0        0    |
| S 12      0        0    |
| S 13      0        0    |
| M 14      1        5    |                                                        H
| T 15      0        0    |
| W 16      0      124    |             HHHHHHHHH
| T 17      0        0    |
|  F 18      1        7                                                                S
| S 19      2       10    |                                         H        H
| S 20      0       15    |                                        H
| M 21      0        0    |
| T 22      0        0    |
| W 23      0        0    |
| T 24      5       34    |                                    H          HS                             H
| F 25      0        0    |
| S 26      0        1    |                                        I
| S 27      0        0    |
| M 28      0        0    |
| T 29      2       19    |                                I                        S            H
| W 30      2       14    |                                               O             S
----------------------------------------------------------------------------------------------------------------------
LEGEND :     H FOR HARDWARE
             S FOR SOFTWARE                      STATISTICS
             O FOR OPERATIONAL
             U FOR UNEXPLAINED
             I FOR LATE IPL

                                   TOTAL SCHEDULED HOURS OF PRODUCTION :  479
                                   TOTAL DOWNTIME (MN)   :  396 , AVG/DAY :  13.20 , AVG/PROD HOUR :   0.41
                                   TOTAL REIPL'S         :   21 , AVG/DAY :   0.70
                                   DOWNTIME RATE IS      :  1.38 PERCENT OF SCHEDULED PRODUCTION HOURS
```

INTERACTIVE SYSTEMS RELIABILITY

The uptimes achieved for the month of April for each of APL, ATS, and CPS were 98.42%, 98.39% and 98.36% of scheduled operation, respectively. The number of scheduled hours of operation for the month of April totalled 466, while the number of unscheduled IPL's per day was 0.28. In addition to the scheduled time, interactive services were also available for approximately 109 hours of unattended weekend operation.

The percentage breakdown of total system downtime for April was: Hardware - 236 mins. (55.66%); Software - 24 mins. (5.66%); Other - 164 mins. (38.67%). Eight unscheduled IPL's were required as a result of the failures.

The following table summarizes the time lost out of scheduled hours of production due to system failures for each of the systems. There was one late start on April 10, resulting in a total delay of 34 minutes for APL due to a broken drive belt on one of the disk drives. Power failures and disk problems accounted for an inordinate amount of downtime during April.

Kam Jain

DATE	DOWNTIME (mins)			REASON
	APL	ATS	CPS	
Tue. Apr. 1	24	25	31	*Channel Error (HARDWARE)
"	11	13	14	*System Programmer Error
Wed. Apr. 2	-	4	-	ATS abend S001 - Data Check
Thu. Apr. 3	62	63	65	*Power failure C.B. tripped in Multiplexor ch.
Thu. April 10	34	-	-	Disk drive belt broken (HARDWARE)
Thu. April 17	28	30	31	*I/O Supervisor error (HARDWARE)
Mon. April 21	112	115	116	*Power failure 50 amp fuse blown in LCS
Tue. April 22	111	150	152	*Solid system-Disk problems (HARDWARE)
Mon. April 28	22	24	25	*Power Check 3705 (HARDWARE)
Tue. April 29	21	23	24	*APL Internal timer problem (SOFTWARE)
Total	425	448	458	*IPL Required

System Failures April 1 to April 30, 1975

DATATALK EVERY DAY ALL SUMMER

DATATALK services will be offered by UTCC throughout the summer from:

10 a.m. - 10 p.m. Monday through Friday.

By calling one of our experienced programmers, users can access advanced computing facilities and obtain solutions to their problems and casual inquiries free of charge.

Dial 928-6710 from your office, home, cottage...wherever and nearly whenever a computer can be of assistance to you.

DATATALK: MORE DATATALK DIAL-LOGS AND QUICK QUERIES

DATATALK: Good morning, DATATALK services...
C: Oh, hi. Ah...would you do an ordinary T-test for me please.
C: The means are 1.981 and 2.241.
C: The standard deviations are 0.997 and 0.965, and these are on 157 and 108 observations, respectively.
D: O.K. The T-value is 2.1054 and that is on 263 degrees of freedom.
C: Hm. Fine. Thank you...by the way, is that significant at the five per cent level? I..ah..don't have tables with me.
D: Yes, it is significant at the five per cent level, but not at the two per cent level.
C: Well...that's fine. Thank you very much. Bye now.

DATATALK: Good morning, DATATALK services...
C: Hello. What I would like to calculate is the chi-squared statistic for two 2x2 contingency tables.
C: And would you hurry please? This is a long-distance call.
D: Yes. What are the tables?
C: 30/187 and 19/165. The second one is 9/187 and 2/165.
D: 1.50 and 3.754 on one degree of freedom.
C: Fine. Thank you. I'll check tables later. Anyway, the difference is obvious. Thanks, bye now.

Cont'd...

DIALOGUES

DATATALK: Good morning, DATATALK services...
C: Hi. How much interest do I pay on a $5000 loan at thirteen and one half per cent over three years?
D: Hm. How many payments?
C: Oh. Ah...thirty-six...do you need to know that?
D: Yes, I do, because it determines how quickly the outstanding principal is diminished.
D: Then, the total interest is $1041.70 and you pay that at, ah, $167.83 a month.
C: Wow...hm...what if I up my payments to say $200.00 per month?
D: Yes. Well then...ahm...the total interest payed out is $841.04...and the term is, of course, shortened too.
C: You mean fewer payments?
D: Yes. About 5800 divided by 200. That's twenty-nine payments plus a small one...so thirty all together at $200.00 a month.
D: Suppose I print out the amortization schedule and send it to you?
C: Terrific. Thank you very much. Good bye.

DATATALK: Good morning, DATATALK services...
C: Hello. Ah...I'm wondering, how many prime factors are there in the number 219,253,169,063?
D: Ahm...there are five factors...17 19 23 31 and 952057.
C: Oh...952057 is a prime? Then I need to look no further. Thank you very much. Good bye.

Ernst Goetze

REGISTRATION FOR COMPUTER CENTRE NON-CREDIT SHORT COURSES

NAME ____
(FIRST) (LAST)

CAN # IF REQUIRED: ____________________________

CAN HOLDER'S NAME: ____________________________

Mailing address **including city or borough**. If you have a university address please use it. (Please be sure that you are known at the address you give -- we have received numerous undeliverable rejects in the past).

____

____

____

DEPARTMENT ___________________________________

OR MAJOR COURSE ___________ PHONE _________________

Please enroll me in (circle number):

C1. INTRODUCTION TO COMPUTING
C2. WHO ME -- COMPUTE?
C3. SURVEY OF MATHEMATICAL PACKAGES
C4. WATFIV
C5. ADMINISTRATIVE TERMINAL SYSTEM (ATS)
* C6. INTRODUCTION TO PLOTTING
* C7. JOB CONTROL LANGUAGE (JCL)
* C8. COMPREHENDING IBM MANUALS

Confirmation of course(s) will be sent to the above address along with the room number in which the course will meet.

* You must be a CAN holder or authorized by a CAN holder to take this course.

----------FOLD----------FOLD----------FOLD----------FOLD----------

Education Schedule
Computer Centre
Room 128
Sir Sandford Fleming Labs
University of Toronto
TORONTO, Ontario
M5S 1A1

UTCC COMPUTER EQUIPMENT

SYSTEM/370 MODEL 165-II

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream and TSO services
- 3072K bytes of memory
- 1 drum
- 13 disk drives (3330)
- 8 disk drives (2314)
- 6 magnetic tape drives (4 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 8 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides Interactive Systems Service
- 1536K bytes of core
- 24 disk drives (2314)
- 3 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL, ATS and CPS

7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

COMPUTER RESEARCH FACILITY

- located in SF207
- DEC GT44 Systems with
  - 1 PDP-11/40 CPU
  - 2 9-track dual density tape drives
  - 1 1000 cpm card reader
  - VT17 graphics display unit
  - 1 lab. peripheral system with A/D & D/A
  - 1 CVI 260 Video Bandwidth Compressor
- DEC GT40 System with
  - 1 PDP-11/10 CPU
  - 1 2314 tape disk drive
  - 1 VT12 graphic display unit
  - 9-track/800 BPI tape drive
  - 1 Calcomp microfilm plotter

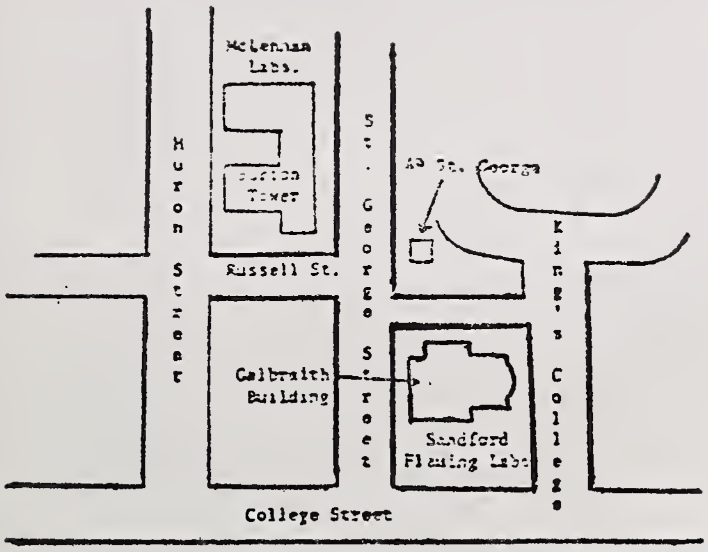
UTCC DIRECTORY

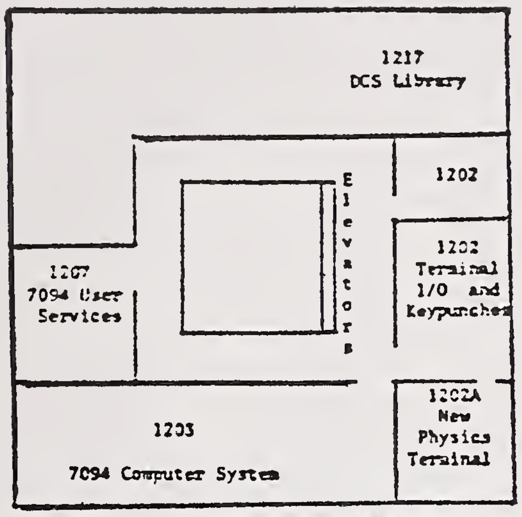
	ROOM	PHONE 928-
DIRECTOR		
John C. Wilson	SF143	6496
ASSOCIATE DIRECTOR		
Al Heyworth	SF116	4936
ADMINISTRATION MANAGER		
Anthony Pieterse	SF137	8948
INFORMATION OFFICE		
General Inquiries Don Gibson	SF128 SF128A	4990 or 4991
MANAGER, SERVICES		
Stan Yagi	49 St.Geo	7331
SUPERVISOR, MARKETING SERVICES		
Dave Scobie	49 St.Geo	6877
TERMINAL CO-ORDINATORS		
Sandford Fleming Terminal		
Mark Tapia	SF125	7109
Program Advisors	SF117	8599
Erindale		
Vaughan Lawrason		828-5311
Scarborough		
Ralph Lombardi		284-3173
Arts and Science		
Marlene Domoney	SS2104	6509
Management Studies		
Paul Roth		4917
MANAGER, SUPPORT SERVICES		
Joyce Walton	49 St.Geo	6875
MANAGER, OPERATIONS		
Derry Cox	SF113	7092
MANAGER, SYSTEMS		
Rein Mikkor	SF113	5058
SYSTEM HARDWARE SUPERVISOR		
Eugene Siciunas	SF113	4967
MANAGER, 7094 SERVICES		
Joyce Walton	49 St.Geo	6875
Supervisor (7094)	NP1207	7094
MANAGER, COMPUTER RESEARCH FACILITY		
Dennis Smith	SF214B	4800
LAB CO-ORDINATOR (CRF)		
Krishna Patnaik	SF207	8858
CONTRACT PROGRAMMING		
Paul Scobie	SF214C	2694
AUTHORIZATION CLERK		
Yvonne Bowen	SF139	8703

JOB AND SYSTEM STATUS QUERIES

SYSTEM/370, TSO	7373
ATS/APL	6234
7094	7094
2741 TERMINAL MALFUNCTIONS	7107
029 KEYPUNCH MALFUNCTIONS	6465

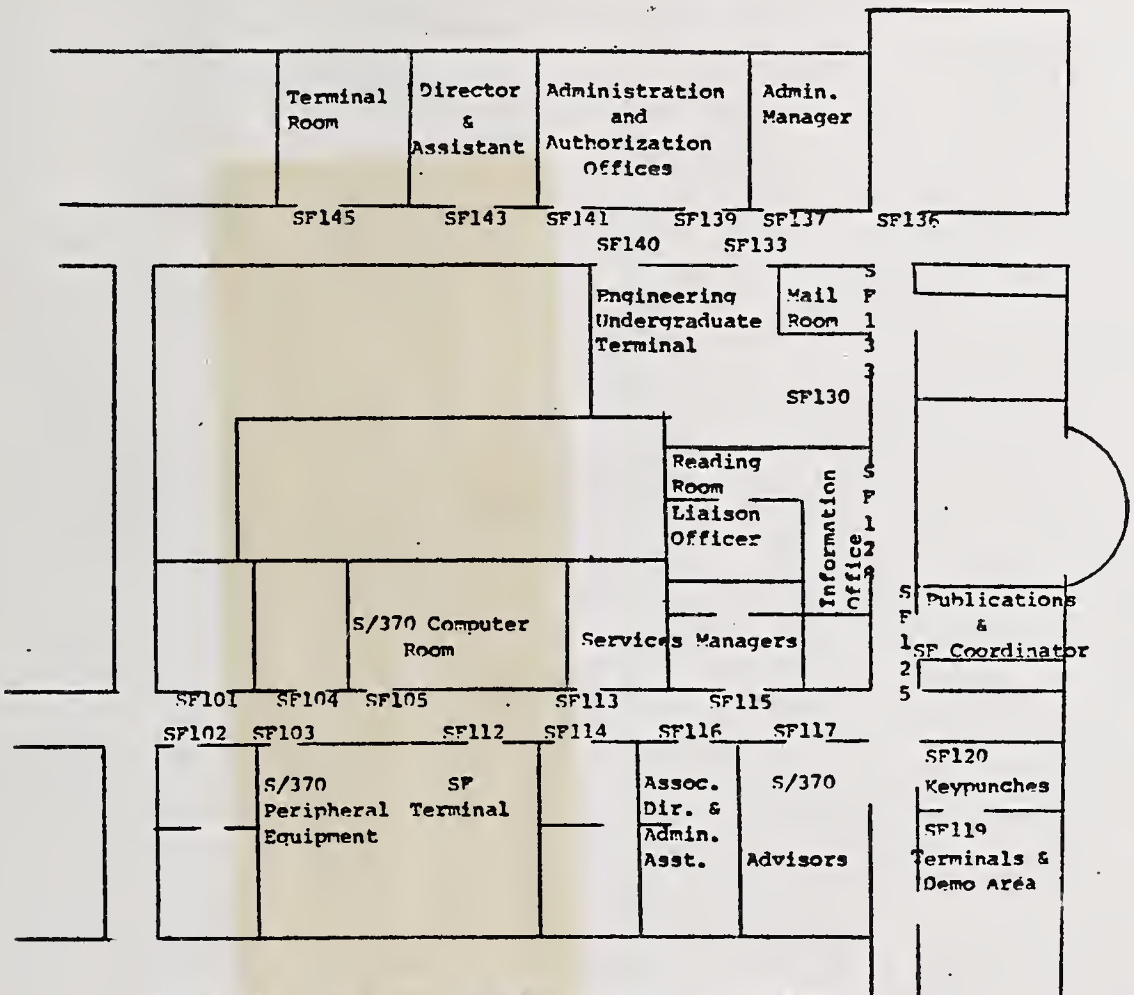
SERVICES	DIAL-UP	ADVICE
APL	7200	6710
ATS	7100	7107
TSO - 2741	7303	8599
TSO - TTY (10 cps)	7390	8599
TSO - TTY (30 cps)	7386	8599
DATATALK	6710	6710



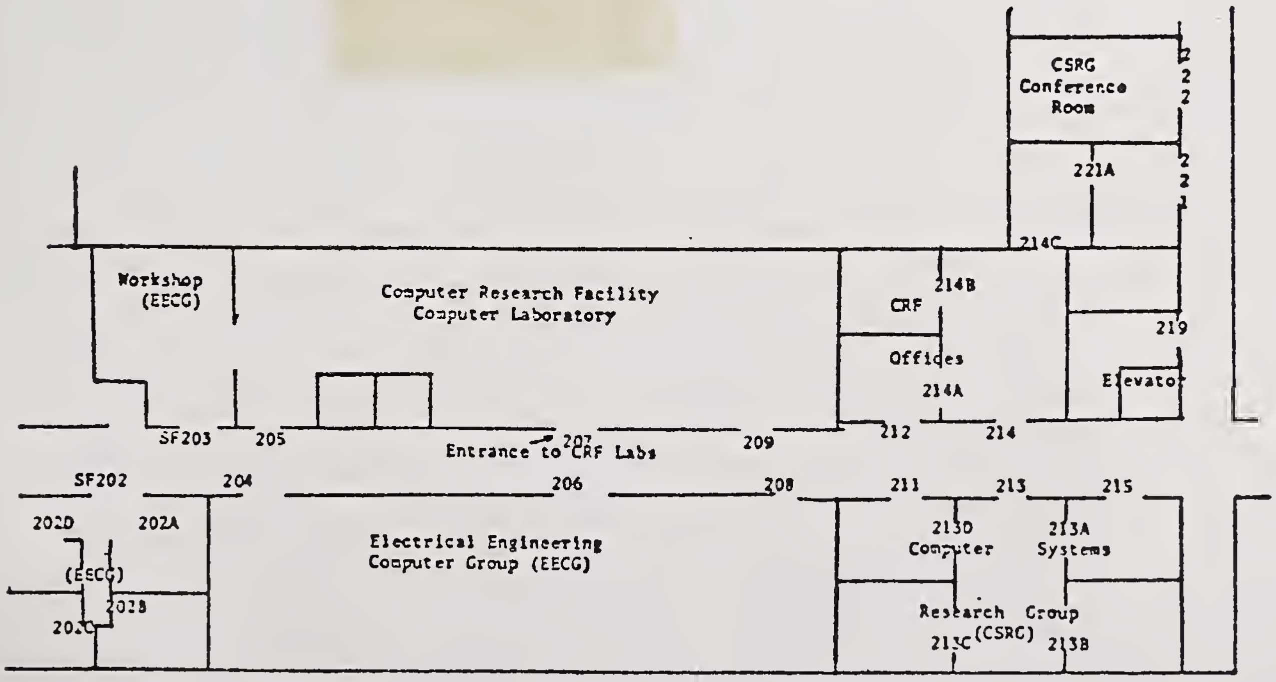


FLOOR PLAN: TWELFTH FLOOR, BURTON TOWER

UNIVERSITY OF TORONTO COMPUTER CENTRE



FLOOR PLAN: FIRST FLOOR, SANDFORD FLEMING LABORATORIES



FLOOR PLAN: SECOND FLOOR, SANDFORD FLEMING LABORATORIES

UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA.

CAMPUS DELIVERY

MR.G.GRANT
UTCC
SANDFORD FLEMING LABS.
ROOM 143
UNIVERSITY OF TORONTO